



## Overview

The recent resurgence of trenching and excavation fatalities have emphasized that those activities pose some of the most serious hazards to construction workers. OSHA has long maintained that excavation-related incidents can be prevented, particularly by following its standards for excavation and trenching: 1926 Subpart P. This study argues that although there are proven protective systems and strategies, they have been used inconsistently across the sector. The research team used a mixed methods framework to understand the reasons for this limited adoption, developing two surveys to

## Key Findings

- Based on OSHA data from 2009 to 2021, trenching/excavation incidents resulted in an annual average of more than 33 fatalities.
- More than 60% of the deaths were from three NAICS codes: 237110 (Water and Sewer Line and Related Structures Construction), 238910 (Site Preparation Contractors), and 238220 (Plumbing, Heating, and Air-Conditioning Contractors).
- Of the 389 reported cases of severe injuries in excavation and trench work since 2015, 23% were cave-ins from the unprotected side of trench.
- Survey respondents said incidents occur because of lack of training, negligence, protection system not or incorrectly used, and absence of a competent person. They also suggested that lack of hazard recognition is the primary reason for fatalities.
- The data analysis was used to develop a free, multi-lingual web-based application: Safety in Excavation and Trenching for you (SETU). SETU has two main sections: Learn and Protect. *Learn* offers self-study content about key OSHA trenching and excavation standards and soil properties and its characteristics. *Protect* helps workers find the most appropriate protection system for their situation: sloping, shoring, or shielding.
- SETU converts user input into dynamic trench visualizations to provide information about protection systems and assist in job planning.
- When SETU was pilot tested with staff from a general contractor, their consensus was that it was straightforward, intuitive, and precise.